

# Saturday Magazine.



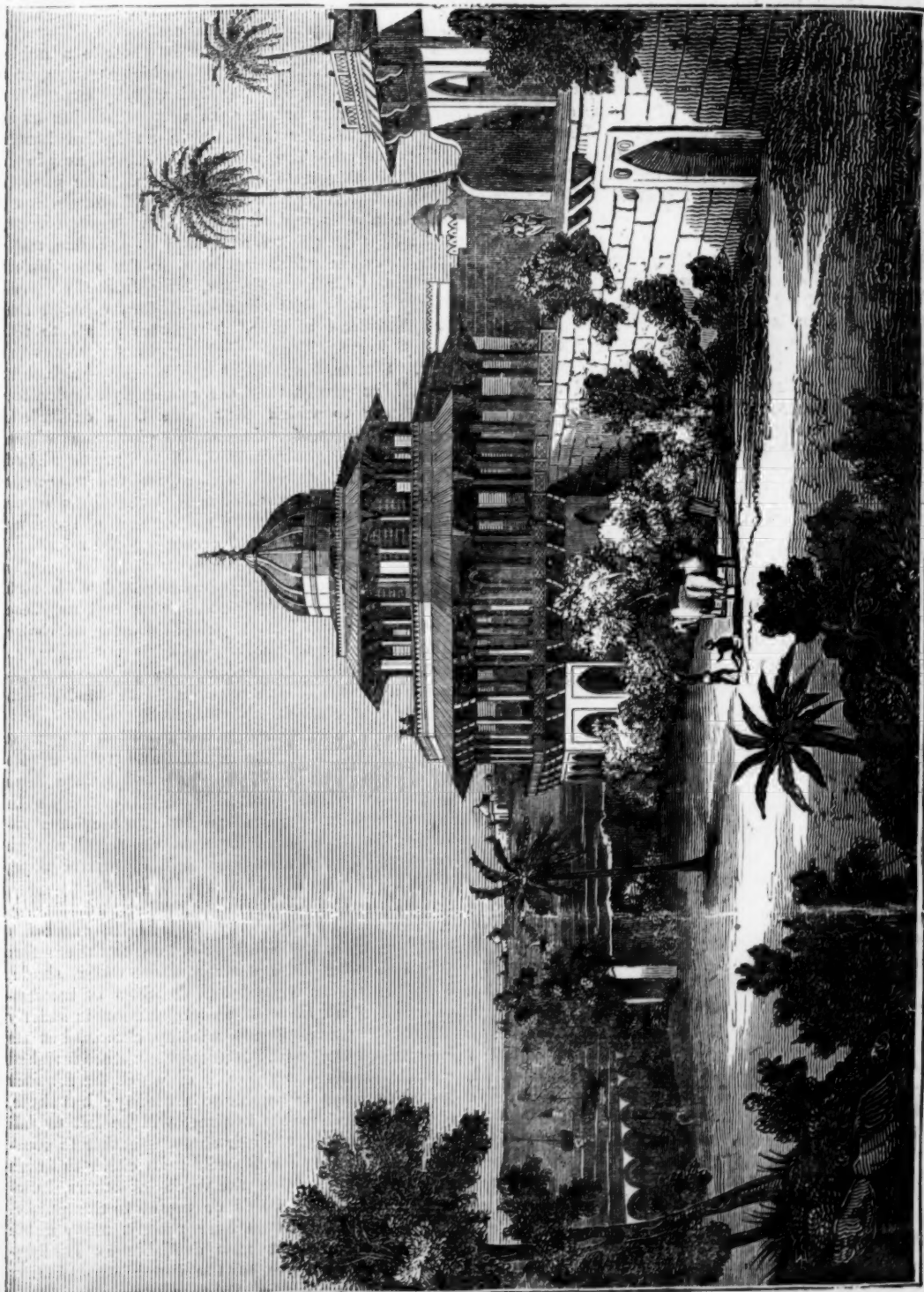
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FORT OF THE CHALES SATOON, ALLAHABAD, E. I.

## EAST INDIA STATIONS.

## No. VI. ALLAHABAD.

THE city of Allahabad, which is the capital of a province of Hindostan bearing the same name, is distant from Calcutta 470 miles. It is situated at the juncture of the two grand rivers of India,—the Ganges and the Jumna, occupying the extreme point of the Doab, as that fertile district is named which lies between those two mighty streams. It holds a middle rank amongst European stations in the Mofussil, being many degrees in advance of the slenderly garrisoned cantonments of the jungles, yet very inferior to the larger depôts, such as Cawnpore\*. This city owed its name of Allahabad, or "the Abode of God," as well as what consequence it once possessed, to the Mussulman conquerors of India. Akbar himself made it a favourite place of residence, and built there a noble fortress, the *Chales Satoon*, which was, in former days, of unequalled beauty. With the exception, however, of this building,—a mosque, entitled the Jumna Musjeed,—several tombs remarkable for the elegance of their structure, and a garden and serai, which was the property of one of the emperors, Sultan Khosroo, the city does not display those remains of magnificence, which might have been expected in a place thus favoured with the presence of royalty. It in fact retains few other vestiges of the Moghul conquest; and its Mussulman inhabitants being limited in numbers, and of little importance as regards their talent, rank, or wealth, it has obtained among the neighbouring nations, the contemptuous name of Faheerabad, or "Beggars' Abode."

Of the buildings just mentioned, the principal object of curiosity is the *Chales Satoon*, which stands on the extremity of the point of land stretching into the waters of the rivers Ganges and Jumna, whose broad currents are united beneath its walls. Though injured in its appearance by the alterations necessary to transform an ancient Moghul castle into a modern fortification, it still retains somewhat of its Oriental and feudal air; rising in majestic grandeur from the river, whence it may be espied at a very considerable distance. "Its lofty towers have been pruned down into bastions and cavaliers, and its high stone rampart topped with turf parapets, and obscured by a green sloping glacis." There are low posterns leading to the glacis facing the river, but the principal entrance of the fort of Allahabad is landward, and is not to be paralleled in magnificence by any building intended for a similar purpose. A noble arched hall, in the gothic style, surmounted by a dome, surrounded by arcades and galleries, and enriched with "arabesques of gold and flowers," appears beyond the ample portal, an entrance worthy of the finest citadel in the world.

From a balcony, elevated nearly to the summit of a tower, on which the windows of one of the chambers open, a prospect of singular beauty is obtained. The spectator looks down upon a grove of mango-trees, flanking a fine esplanade, and peopled with innumerable ring-necked parroquets, which, as the sun glances upon their vivid plumage, dart backwards and forwards amidst the branches like coruscations of emerald light. Above, upon pediment and pinnacle, other bright wanderers of the air erect their crests, and plume their wings, or take their upward flight into fields of gold.

Along the thickly-wooded shores of Allahabad bank, buildings of various degrees of interest are interspersed: on the small islands which raise their

sandy platforms above the surface of the river, huge alligators bask; and the opposite shore of Bundelkund, rising in towering cliffs, crowned with pagodas, on the remnants of hill-forts, forms a noble background beautifully outlined against the clear blue sky.

The Jumna Musjeed, or principal mosque, is still in good repair, but very little frequented. It stands in an advantageous situation on the banks of the Jumna, adjoining the city on one side, and on the other, an esplanade before the glacis, planted with trees like that of Calcutta. It is a solid and stately building, but without much ornament.

The finest things in Allahabad are Sultan Khosroo's serai and garden. The former of these is a noble quadrangle, entered by four fine Gothic gateways, and surrounded, within an embattled wall, by a range of cloisters, under which is such accommodation as is usually provided for travellers in an Indian hostel or caravanserai. The whole is, however, now in a most deplorable state of dilapidation. The garden adjoining, which is planted with fine old mango-trees, is also in a most neglected condition. Three tombs, erected in this garden according to the fine taste displayed by the Mohammedans, in the selection of the site of their mausoleums, have, from the extraordinary solidity of their construction, escaped the destroying hand of time. They were raised to the memory of two princes, and a princess of the imperial family. Chaste, magnificent, and solemn,—rich, but not florid or gaudy, they are peculiarly adapted for the purpose to which they have been dedicated. Splendid terraces, forming stately platforms, which like those of the mausoleums of Agra† are furnished with several apartments below, form the basement story. The central chamber in each contains a stone sarcophagus, in which the mortal remains of the dead are deposited. Above, and occupying the middle of each platform, a circular, dome-crowned hall, finely proportioned, and profusely ornamented with rich sculpturing, delights the gazer's eye; and in these palace-like tombs, which are now the sole survivors of the splendour of the once-mighty sovereigns of Allahabad, the mind cannot fail to be sensibly impressed with one of the great traits in the Moslem character,—its reverence for the dead.

The tombs of Hindostan have proved the most lasting memorials of the wealth and taste of its Moghul conquerors. Whilst fort and palace have crumbled away, or lost their original designs in modern alterations and adaptations, these have remained unchanged, to awaken in the mind a high admiration for the taste and skill of former days, which their architectural beauties display.

The religious creeds, both of Moslem and Hindoo, exhort the rich to plant groves, dig wells, and build public edifices, acts of charity essential to the comfort of a people living in a country where water, shade, and the shelter of a roof, are blessings of incalculable value. The letter of this injunction is strictly regarded by many of the wealthy classes, but its spirit is sadly neglected. Immense sums are lavished upon new buildings, by means of which the founder hopes to transmit his name to posterity; but these, if not completed in his lifetime, will be left to fall into premature ruin, the heir choosing rather to commence a fresh work for himself than either to finish an old one, or to repair the works of others, however elegant in themselves or useful to the public. The banks of the Jumna here present many noble ghauts, which are not now available as landing-places, in consequence of the lower steps having given way, and separated themselves from the upper

\* See Saturday Magazine Vol. II., p. 217

† See Saturday Magazine Vol. III., p. 74.

flights. A trifling repair, commenced in time, would have prevented the mischief, and though, even now, not too late to avert the impending ruin, the steps, one by one, are allowed to drop away, until the encroaching water must, in time, swallow up the whole.

"Allahabad," remarks Bishop Heber, "may, however, revive to some greater prosperity, from the increase of the civil establishment attached to it. It is now the permanent winter station of the Sudder Mofussil Commission, a body of judges, whose office is the same with regard to these provinces as that of the Sudder Dewannee Udawlut for the eastern parts of the empire. The necessity for such a special court had become very great; the remoteness of the Sudder Dewannee had made appeals to it almost impossible." The degree of confidence in the justice of their rulers, with which the officers of this court have inspired the natives, is said to be very great. They make circuits during all the travelling months of the year, generally pitching their tents near towns, and holding their courts under trees, an arrangement so agreeable to Indian prejudices, that one of these judges said it was, in his opinion, one main source of their usefulness, inasmuch as an Indian of an humbler class is really under constraint and fear in a house, particularly if furnished in the European manner, and can neither attend to what is told him, nor tell his own story so well as in the open air, and amidst those objects from which all his enjoyments are drawn. At Allahabad, however, where their permanent abodes are, these judges have a court-house, though a very humble one, thatched, and inconvenient.

The military cantonments of Allahabad are beautifully picturesque, having a greater diversity of hill and dale than is usually to be found upon the plains of India, and being finely wooded in every direction. The drives are numerous, and there is one leading along the walls of the cemetery, which derives a melancholy interest from the recollections of those who sleep within. India has not unjustly been entitled "Scotland's churchyard;" the Caledonian tenants of the tombs certainly outnumber those of the sister islands, and those of Allahabad have their full proportion of veterans and youths from the green hills and clear streams of North Britain. The grave-stones and mausoleums erected in Anglo-Indian burial-grounds are peculiar to the country, and are generally more heavy and ungraceful than the monuments of European churchyards. There are, however, some exceptions; and a broken column at Allahabad, raised over the resting-place of a Fitzclarence, forms a classic and appropriate memorial of a young man of good promise cut down in the vigour of his youth. He has left behind him something better,—a name linked with gracious deeds.

The situation of the city is said to be healthy; but either from its proximity to the two rivers, or the quantity of wood which gives the surrounding country so luxuriant and park-like an appearance, it is more humid than any other place in the Doab, and is stated to possess a peculiar climate of its own, the hot winds being considerably mitigated, and rain falling at seasons when other parts of the country are dry. The gardens are in consequence very productive.

But to the Christian reader, the most interesting consideration should be, the melancholy state of Allahabad as respects its religious character. The city, we are told, is almost wholly given up to idolatry, and has ever been celebrated for the pilgrimage of Hindoos, who are attracted to a spot *blessed*, as they think it, by the junction of two sacred rivers. On this account it is esteemed holy by all casts, who

annually repair in crowds to bathe themselves in the united streams. Whilst the curse of barrenness has ever been considered, both by rich and poor, as the greatest misfortune that can attend the married state, it is extraordinary that that most inhuman crime, infanticide, merely for the purpose of avoiding the expense of bringing up female children, has been long the open disgrace, and is said still to be the secret practice, of many classes of Hindoos. When prayers, and gifts to Brahmins, have been unsuccessfully employed to obtain the desired blessing, the despairing supplicants not unfrequently attempt to propitiate their blood-thirsty goddess Doorga, by the promised sacrifice of their first-born! Should their desire be accomplished,—a benefit which is of course attributed to the interposition of a deity delighting in the waste of human life,—they consider themselves to be solemnly pledged to the performance of the vow, and the hallowed spot in which the Jumna throws itself into the Ganges is very commonly chosen for the fulfilment of the awful duty. This, however, if now accomplished at all, must be done in secret, as the crime of infanticide is not, upon any pretext whatever, permitted by the British Government.

In former and more barbarous times, the junction of the Jumna and the Ganges was the scene of those fearful human sacrifices which were not more savage than absurd, in a religion professing so much humanity towards the brute creation. A youth and a maiden representing two of the favourite deities of the Hindoos, after having received divine honours from the crowd following their triumphal cars, were flung into the sacred waters, and supposed by the ignorant multitude to be borne upon the holy stream to the paradise of the blessed. Figures of clay are now substituted for the human performers.

Another of these horrible spectacles used to be exhibited at the commemoration of the triumph of Râma and his ally, Hunamân, attended by an army of monkeys, over the giant Ravana. The unfortunate beings, selected to represent the principal characters, were, at the end of the festival, no longer visible to mortal eyes. The people were taught to imagine that they had been absorbed into the divine essence, and claimed by the deities whom they had represented: a process of which the officiating priests knew the secret. Poison was said to be mixed up with the sweetmeats presented at the termination of the feast, and the unhappy group, brought from a distance, and unseen except during the short period of their performances, were by many supposed to have been the deities themselves, descending to assist at the celebration. The ceremony, as appears from a very amusing account given of it in his Journal, by Bishop Heber, as seen by him during his visitation of Allahabad, is now nothing more than a ludicrous exhibition. The Moghuls have the credit of being the first opposers of these shocking rites; and the Christian governors of the land have insisted upon their total abolition. The praiseworthy example set in the Company's territories, has been likewise followed in the independent states, and, consequently, human sacrifices have become rare in India.

These are, indeed, gratifying considerations as far as they go. For thus we see the beneficial effects which Christianity extends to those who come in contact with it, even though they do not themselves receive it; but, oh, how much remains to be done! How melancholy is the scene which the millions of India present to the reflecting mind! How many cities every where present themselves, full of inhabitants, like Allahabad, almost wholly given to idolatry! And, what is even worse, with very little



means at present adopted in them to recommend the Gospel to their notice and belief. When Allahabad was visited by Bishop Heber, who deeply lamented its destitute state, in reference to this point, he found there a number of Christians of the Church of England, but unprovided, as it seems, even with a single clergyman. "I remained," says the good bishop, "ten days at Allahabad; during this time I had the pleasure of confirming twenty persons, two of them natives, and of preaching and administering the Sacrament of the Lord's Supper to seventy or eighty, of whom some were also natives, or at least in the native dress. The residents here are exceedingly anxious for a chaplain, but that one should be appointed at this time I entertain but few hopes, though it is very sad that such a congregation should want one." If this reasonable want has not yet been supplied, it is to be hoped that the attention of the governors of that noble institution, Bishop's College, at Calcutta, may be directed to it, and that as they have been able to send forth ordained missionaries to new stations, of which Cawnpore, before described, was one, so this neglected spot may also in time receive the needed aid; for, from what we have seen in this paper of the character and situation of the place, we must necessarily conclude, that if the Gospel were once to make a firm settlement there, a most favourable opportunity would be afforded, both by its being a favourite resort of pilgrims, and, also, in consequence of its ready means of communication with all parts of India, of spreading the knowledge of its blessed doctrines and principles. D. I. E.

[Abridged from BISHOP HEBER'S Journal in the *Asiatic Journal*.]

#### THE NATURALIST'S SUMMER EVENING WALK.

When day declining sheds a milder gleam,  
What time the May-fly haunts the pool or stream;  
When the still Owl skims round the grassy mead,  
What time the timorous Hare limps forth to feed;  
Then be the time to steal adown the vale,  
And listen to the vagrant Cuckoo's tale;  
To hear the clamorous Curlew call his mate,  
Or the soft Quail his tender tale relate;  
To see the Swallow skim the dark'ning plain,  
Belated, to support her infant train;  
To mark the Swift in rapid giddy ring,  
Dart round the steeple, unsubdued of wing:  
Amusive birds! say, where your hid retreat,  
When the frost rages, and the tempests beat?  
Whence your return, by such nice instinct led,  
When Spring, soft season, lifts her bloomy head?  
Such baffled searches mock man's prying pride,—  
The God of Nature is your secret guide!  
While deep'ning shades obscure the face of day,  
To yonder bench, leaf-shelter'd, let us stray,  
Till blended objects fail the swimming sight,  
And all the fading landscape sinks in night;  
To hear the drowsy Dor come brushing by,  
With buzzing wing, or the shrill Cricket cry;  
To see the feeding Bat glance thro' the wood,  
To catch the distant falling of the flood;  
While o'er the cliff th' awaken'd Churn-owl hang,  
Thro' the still gloom protracts his chattering song;  
While high in air, and poised upon his wings,  
Unseen, the soft, enamour'd Wood-lark sings;  
These, Nature's works, the curious mind employ,  
Inspire a soothing melancholy joy;  
As fancy warms, a pleasing kind of pain  
Steals o'er the cheek, and thrills the creeping vein.  
Each rural sight, each sound, each smell combine,  
The tinkling sheep-bell, or the breath of kine;  
The new-mown hay, that scents the swelling breeze,  
Or cottage chimney smoking thro' the trees.

WHITE, of Selborne.

WHATEVER strengthens our local attachments is favourable both to individual and national character. Our home, our birth-place, our native land; think, for a while what the virtues are which rise out of the feelings connected with these words!—*The Doctor*.

#### THE SUMACH, (*Rhus coriaria*.)

THE genus to which this plant belongs contains between twenty and thirty species, many of which are useful in the arts.

The Sumach of the Morocco-leather makers, (*Rhus coriaria*.) is a shrub from ten to twelve feet in height: the bark and the covering of the leaves of this species have a texture resembling velvet; its flowers are small, of a greenish-white colour, and grouped in large bunches at the extremity of the branches. It grows wild, in dry stony grounds, in the south of France, and in other parts of southern Europe; it is also found in the Levant.



THE SUMACH, (*Rhus coriaria*.)

The fruit of this Sumach is astringent, and was formerly used in medicine; it was employed by the ancients, on account of its acid flavour, as a seasoning to various dishes, and it is said the Turks still use it in the same manner. The Greeks and Romans used the young branches of this shrub, when dried and reduced to powder, as a substitute for oak-bark, in the process of tanning, and it is still used in Spain and Italy for the same purpose, principally in the preparation of goat-skins, in the manufacture of black Morocco leather. This shrub, although tolerably hardy, is unable to endure the frost.

The Sumach of Virginia, (*Rhus typhina*.) is cultivated in the gardens of Europe as an ornamental shrub, for which purpose it is well adapted, from the beautiful red colour of its berries, which hang in long and graceful bunches, and from the varied, rich, and brilliant tints which its leaves assume in the autumn. In America, the bark of this tree is dried and reduced to powder, and used for the same purposes as the young branches of the last-mentioned species.

The Varnish Sumach, (*Rhus vernix*.) is a shrub from twelve to twenty feet in height; it is found in Japan, and yields a milky sap, which will flow from incisions made in the bark. This liquid hardens into a gum-resin, and, when dissolved in some peculiar oil or

spirit, forms the beautiful varnish for which this nation is so much famed. The seeds of the same tree give out, by pressure, a kind of concrete oil, of which candles are made.

The Copal Sumach, (*Rhus copallinum*), a smaller species, is found in the dry and sandy soils of South America. It produces that valuable material in the composition of varnishes, Gum-Copal.

The Poisonous Sumach (*Rhus toxicodendron*) resembles the last considerably in outward appearance; it is originally from the same country, but it is cultivated in France and other parts of Europe. The poisonous property of this plant, although it exists to a certain extent in the leaves and in its sap, appears from experiments made for that purpose, to reside more particularly in the exhalations that arise from the surface of its leaves, when they are not exposed to the direct rays of the sun. The gas thus evolved, has been ascertained to consist of carbon and hydrogen, the first of which, if inhaled, is destructive of life. The ordinary effects of this deleterious air, when a person is exposed to its influence, is to produce a swelling of the eyelids, and frequently of the whole face, and a smarting and burning sensation in the hands, followed in these parts with an eruption of little watery vesicles; but these effects are, of course, varied in intensity, according to the constitution of the individual. In spite, however, of the noxious properties of this shrub, it has been used on the Continent in medicine, particularly in cases of paralysis.

Most of the species of this useful tribe of plants are used in tanning, and one in particular, (the *Rhus cotinus*), furnishes us with a yellow dye, but it is not considered very durable, when employed without mixture with other colouring matters. In England, advantage is taken of absence of colour in the tanning principle of this shrub, by applying it instead of oak-bark, in the preparation of boot-tops, thus preserving the leather as white as possible.

#### INSECT SAGACITY.

A NUMBER of curious trees, shrubs, and aromatic plants adorn the wilds of Turcaeer: among them are extensive forests of the banbat-tree, (the acacia, or Egyptian thorn,) much esteemed in the materia-medica of the ancients for its gum, which it produces in great abundance, with every property of gum-arabic. The leaves, like all the mimosa tribe, are pinnated, the branches covered with sharp white thorns, adorned with clusters of fragrant globular blossoms, in great profusion, pink, yellow, or white; the most beautiful is an oblong flower, the lower part nearest the stalk of a delicate rose-colour, the other half a bright yellow. The gum oozes from the bark on the trunk and larger branches. From the flowers it is said the Chinese extract a beautiful yellow dye.

The banbat-tree afforded a curious specimen of insect sagacity, in the caterpillar's nests suspended by thousands to the branches. This little animal, conscious of its approaching change, and the necessity of security in its helpless state, as a chrysalis, instinctively provides itself a strong mansion during that metamorphosis. As a caterpillar, it is furnished with very strong teeth; with them it saws off a number of thorns, the shortest about an inch long, and glues them together in a conical form, the points all tending to one direction, the extremity terminating with the longest and sharpest. This singular habitation is composed of about twenty thorns for the exterior, lined with a coat of silk, similar to the cone of the silk-worm, suspended to the tree by a strong ligament of the same material. In this asylum, the banbat-caterpillar retires to its long repose, and, armed with such formidable weapons, bids defiance to birds, beasts, and serpents, by which it might otherwise be devoured. When the season of emancipation arrives, and the chrysalis is to assume a new character in the papilio form, the insect emerges from the fortress, expands its beautiful wings, and, with thousands of fluttering companions released at the same season from captivity, sallies forth to enjoy its short-lived pleasures.—*FORBES' Oriental Memoirs.*

#### THE OCEAN AND THE RIVERS.

##### A FABLE.

THE Rivers, having long paid their just and voluntary tribute to the Ocean, were at length spirited up to opposition by some stagnant pools, which being formed into canals, had found their way to the grand reservoir of waters.

These upstart gentlemen, with a characteristic pride, began to exclaim, "What! shall we, who have been collected with so much care, and conducted hither with so much expense and art, lose our freshness in the briny wave? Were we rivers of magnitude, like the Danube, the Nile, the Ganges, and the Plata, we would soon teach the ocean to be a little more reasonable and polite; and instead of converting every thing to its own filthy purposes without acknowledgment, we would make it know to whom it is indebted for the consequence it assumes. For our parts we are ashamed of such tameness. Does not the Ocean deprive us of our sweetness and purity, and yet monopolize the gratitude of surrounding nations, which is due to us alone? If it will not allow us to assert our natural rights in the scale of social union, we are determined immediately to withdraw our support from the voracious abyss that swallows us up, without mercy and without thanks."

From this mean source the murmurs of discontent arose, and the collected puddles had influence enough to spread their disaffection among the noble streams. Some of the rivers hoped to usurp the dominion of the whole, and therefore sided in the quarrel. Each had his private views in what he did, or wished to do. Committees were formed—resolutions were passed—and deputations appointed. Memorials, remonstrances, and all the artillery of political manoeuvres, were determined to be played off, against the venerable head of the waters.

The Ocean heard of these meditated attacks; but heard them unmoved. It knew the general good; even the order of nature had sanctioned and would maintain its supremacy; and on this account, it did not fear the blind malice of ignorant and impotent opposition.

When deputations, however, arrived from the principal rivers, to state grievances, and to demand redress, they were respectfully received. The firmness that will not yield to idle murmurs of discontent, and the pride that despises them, are very different qualities, and should be differently appreciated.

Having patiently listened to futile and unmeaning complaints, the mighty chief thus attempted to silence them:—"Gentlemen," said the Ocean, "after having so long enjoyed the uninterrupted liberty of falling into my bosom—where, by my chemical power, I preserve you from corruption, and render you not only harmless, but useful in promoting the intercourse of nations—it is with surprise I hear your claims. Were I to refuse taking you under my protection, what would be the consequence? You must, in that case, overflow your banks, and deluge the countries you now beautify and delight. Your streams would run counter one to the other—you would soon become tainted—and mankind would be destroyed by your unbridled violence, or by your pestilential effluvia."

"What is mankind to us?" exclaimed a little scanty stream. "Hold!" replies the ocean. "It is useless I see to waste words. If argument and mildness cannot bring you to reason, force, however unpleasant to me, must. Till you agree to flow in your accustomed channels, I will cut off every secret communication that supplies your springs, and thus feeds

your pride. Know, ye are entirely in my power: the favours I receive from you are amply and gratefully repaid. From me at first you come; and to me you must again return."—DR. MAJOR.

#### CHINESE LETTER WRITING.

THE following letter of business, copied from the original document, an exact translation, in the hand-writing of the late Rev. Dr. Morrison, was addressed a short time since, by one of the Hong merchants at Canton, to Mr. L., a British agent residing at Macao. The Hong, or Security merchants, who are the only individuals in China legally permitted to trade with foreigners, are responsible to the government for paying all duties, whether on imports or exports in foreign vessels; and every ship that enters the Port of Canton is required to have a Hong merchant as a security for the duties, before she can commence unloading. The meaning of the word Hong is a factory, a place of commercial business, a commercial establishment. The name of Mr. L.'s correspondent is GOQUA, or *Seay-woo-kwan*: his Hong name is *Tung-yu-Hang*: the official name is that of the elder brother, *Seay-te-hwa*. M.

#### LETTER FROM GOQUA.

WE have been separated several months. My mind has been constantly and intensely going after you, to receive the beams of your felicitous countenance. It is impossible to express the wing-spread, tip-toe desire which I have felt. Of late the mountains' peaks have been topped with variegated clouds, and the sun's rays have been increasing in warmth: but you, benevolent brother, great man, have been soothed by the order of the seasons, and have experienced a congelation of bliss. Assuredly you have had an abundance of tranquillity and delight.

I have lately heard by Bohea Tea letters, that the price is very high and dear. At first I did not much believe it, but now I have received successive letters from my own farms, which say, that, in consequence of excessive rains in the spring, and previously of falls of hail, the quantity of tea obtained was small; and therefore the dearthness of price.

The first spring crop of Congou was dearer than last year, upwards of six dollars per pecul\*. Happily the leaf was rather good. The second spring crop, up to the present time, had not fallen in price.

Of the *Hea-mei*, Pekoe, the first spring crop was also about five dollars dearer than last year. These are the circumstances concerning Boheas†.

The Ganhwuy‡ green teas this year are only about seven-tenths the usual quantity. The price also is very high. I have ascertained that these are the facts; I write on purpose to inform you.

We, simple brothers, relying on your protection enjoy a coarse repose. Don't trouble your embroidered thoughts about us. This expects you have enjoyed recent tranquillity, and moreover hopes you will condescend to review it, though incomplete.

Your younger Brother,

*Seay-te-hwa*, respectfully announces these things. To Mr. Leeting, (Layton)

Benevolent Brother.

May his azure eyes extend to this!

\* A weight much used in China, about 133 lbs. Avoirdupois. In China almost every thing is sold by weight, not excepting even liquids and live stock. The principal weights are *Taels*, 16 of which make a *Catty*, = 1½ lb.; 100 *Catties* make a *pecul*, = 133½ lbs.

† All the black tea is included in the general term Bohea.

‡ Ganhwuy is a Chinese province, containing a population of upwards of 34,000,000 persons.

As it appears by examining the natural system of the universe, that the greatest and the smallest bodies are invested with the same laws; so a survey of the moral world will inform us, that greater or less societies are to be made happy by the same means, and that however relations may be varied, or circumstances changed, Virtue, and Virtue alone, is the parent of felicity.—DR. JOHNSON.

#### A SELF-TAUGHT MATHEMATICIAN.

EDMUND STONE, a celebrated mathematician, is an extraordinary instance of a man uninstructed and self-taught, acquiring, by dint of perseverance and genius, a thorough knowledge of languages and science. His father was gardener to the Duke of Argyle. Young Stone was eight years old before he learned to read. A servant having by chance taught him the letters of the Alphabet, nothing more seemed wanting to expand his genius. He applied himself to study, and, by the time he was eighteen, he had attained, without a master, a knowledge of perfect geometry.

The Duke of Argyle, who united with military talents a general acquaintance with the sciences, walking one day in his garden, saw a Latin copy of Sir Isaac Newton's celebrated work, the *Principia*, lying on the grass. He called one of his servants to pick it up and carry it to his library, from which he supposed it to have been brought. The young gardener told his grace that the book belonged to him. "To you!" replied the duke, "do you understand geometry, Latin, Newton?" "I know a little of them," answered the youth, with a look of simplicity, arising from a profound ignorance of his own talents and knowledge. The duke was surprised, and entered into conversation with the young mathematician. He asked him several questions, and was astonished at the force, the accuracy, and the frankness of his answers. "But how," asked the duke, "came you by the knowledge of these things?" Stone replied, "One of your grace's servants taught me to read about ten years since. What need one know more than the letters to learn any thing one wishes."

The duke's curiosity was still more strongly excited, and he requested him to relate how he had proceeded to become so learned. "I first learned to read," said the youth. "The masons were then at work upon your house. I went near them one day, and saw that the architect used a rule and compasses, and made calculations. I inquired what might be the meaning and use of these things, and was informed that there is a science called Arithmetic. I purchased a book of arithmetic and learned it. I was told that there is another science called Geometry. I bought the elementary books, and learned geometry. By reading I found that there were good books on these sciences in Latin. I bought a dictionary, and learned Latin. I understood also that there were good books of the same kind in French. I bought a dictionary, and learned French. And this, my lord, is what I have done. It seems to me that we may learn every thing when we once know the letters of the alphabet." The duke was delighted with this account, and gave him an employment which left him sufficient leisure to cultivate his favourite pursuits: for he discovered the same genius for music, painting, architecture, and all the sciences which depend on calculations and proportions.

Neither the time nor place of his birth is known, but he died in 1768.

WE are naturally desirous to live; and though we prize life above all earthly things, yet we are ashamed to profess that we desire it for its own sake, but pretend some other subordinate reason to affect it. One would live to finish his building, or to clear his purchase; another to breed his children, and to see them well matched: one would fain outlive his trial at law, another wishes to outwear an emulous co-rival: one would fain outlast a lease that holds him off from his long-expected possessions; another would live to see the times amend, and a re-establishment of a public peace. Thus we would seem to wish life for any thing but itself.—BISHOP HALL.



## THE USEFUL ARTS. No. V.

## GARDENING.

THE most obvious distinction between *Agriculture* and *Horticulture* has been already alluded to, but it must not be supposed that the employment of hand-labour in gardening is solely determined by the circumstance of the size of the ground not admitting the use of the plough; for an easy remedy would instantly suggest itself in this case,—that of increasing the area of land cultivated for gardens, or what is equivalent, uniting several small gardens into one large one. The true cause of the necessity for *digging* with a spade, instead of *ploughing*, is, that the plough is inadequate to bring the soil into such a state as is necessary for raising the proper produce of a garden with the least quantity of subsequent labour.

The greater part of the vegetables raised in gardens are either exotics from warmer climates, or indigenous plants improved by careful tillage bestowed on successive generations of them for many centuries; and if this care were not constantly employed, the plants in their improved state would not be able to bear the comparative rigour of our climate, but would speedily degenerate to their original, or natural, state.

It has been stated that the chief object of all tillage is to supply the growing plants with constant nourishment, by the frequent moving of the soil about them, and also to prevent their being robbed of that food by weeds growing among them. The operations required to effect these objects, can only be carried on when the plants are placed with great regularity in straight lines; and that each plant may be accessible, they must be planted in small patches, or *beds*, of earth, with walks between them. Instead of sowing the seed of many vegetables in drills, and afterwards rooting up the superabundant plants, (as was stated in a preceding article,) to be the mode of cultivating turnips in fields, it is productive of more economy both of seed and time, as well as of more benefit to their subsequent growth, to sow the seed closely in a small patch of ground, and to *transplant* the young plants when arrived at a certain age. By this means they may not only be planted in their proper beds with the utmost regularity, but there is also another motive for adopting this plan.

Every plant has particular seasons at which, when growing in its native soil or in its native climate, the various stages of its development take place, and if transferred to a less genial situation, it must be sheltered during its infancy from the severity of the air; added to which these successive stages of growth in all plants may be accelerated within certain limits by the application of artificial heat, in order to promote the germination of the seed and its early and rapid growth. This is a desirable object, in order to meet the demands of those who, having the means of purchasing luxuries, furnish the remuneration due to those who employ their care and skill in raising early produce by forced cultivation.

The artificial heat is applied in various manners, according to the vegetable and to the mode of its growth, but the premature germination of the seed is effected by sowing it on a *hot-bed*, which is prepared in the following manner. Stable-litter (or straw which has been saturated with the dung, &c., of horses and cattle) is piled with care and regularity into a quadrangular heap flat at the top. The putrefactive fermentation which speedily ensues in such a mixture of animal and vegetable matter, evolves a quantity of heat which is maintained and confined by the magnitude of the mass: on this heap fine mould is strewed, to the depth of seven or eight inches, and on the whole a *frame* is put, which is covered over with matting, or, if intended to be permanent, with glass lights. The seed being sown in this mould, the heat confined by the frame excites germination, and produces rapid growth in the plant. When strong enough to bear the open air, to which they must be gradually habituated, the young plants are taken up with every care, that the fine fibres of their roots may not be injured, and they are then planted in the bed in the following manner.

The earth being broken fine by digging and *raking*\*, a

\* The gardening rake is shown in the preceding cut, as well as several other tools alluded to in these papers, as the hoe, dibble, trowel, &c.

The *dibble* is a short thick piece of round wood, tapering to a point, and is usually made out of the handle of an old spade; if the point is shod with iron, the tool will last longer and effect its object more readily.

The *trowel* resembles that used by bricklayers and masons in size

line is set out by means of a string stretched between two pegs or iron pins, and the gardener taking the plant in his left hand, with the *dibble* in his right, he makes a perpendicular hole about six or eight inches deep; into this hole he lets the root of the plant descend, till the junction of the stem and root, or the *neck* of the plant, is level with the ground. He then pushes in the fine earth to fill up the hole again, and putting the dibble in obliquely, at a small distance from the plant, by a twist of the tool presses the mould close up to the root. Without this precaution the plant would die, if the fine fibres of the root, instead of being in close contact with the earth, were left in the interstices of the loose pieces.

The plants after this removal will languish for a day or two, particularly if the weather be hot and dry; but they will then revive and grow with increased vigour, in consequence of the greater space from which their roots can derive nourishment. Plants should never be planted out in wet weather, or when the earth is wet from recently fallen rain, for the mould in this state would, after being worked, harden into a mortar, which the fibres of the roots could never penetrate. When it is practicable, the operation should be performed just before rain, when the earth is too dry for it to adhere at all in clods under the hoe or spade.

As soon as possible after the transplanting, when the recently moved plants begin to grow again, the earth should be hoed or dug between them, and, if necessary, a little should be drawn up the stems. Weeds must always be eradicated, or hoed down by the *Dutch* or *Thrust-hoe*, as soon as they appear; and once or twice, at least, during the growth of the plants, the earth between them should be dug deeply, except the plants are vegetables cultivated for their tap-roots, as carrots, parsnips, beet, &c., or are bulb-bearing, as onions, leeks, &c. If the earth were dug deeply between the former class of plants, the roots would *fork*, or throw out side shoots, instead of growing straight or undivided; and the last-named kind of plants would, in such a case, not form large and full bulbs, but would *run to neck*.

Many kinds of vegetables will not admit of transplanting, but the seed must be sown thinly, in straight and equidistant drills; and when the young plants are fairly out of the ground, they must be thinned out by the hoe or by hand, leaving single plants only at such distances apart as they will require to be at when they are fully grown. It should be mentioned here, that nothing is so prejudicial to plants as allowing them to be too close together; more produce, whether it be in roots, leaves, or fruit, is obtained from fine healthy plants, that have had sufficient room to grow in, than from twice their number grown in the same space, and, consequently, crowded together.

Peas, scarlet-beans, and other climbing-plants, require sticks to be put to them to climb up; the sticks used for this purpose are the loppings of young trees, cuttings of underwood, &c., with the smaller branches and twigs left on; these sticks are set on each side of the row of peas, and are set sloping in contrary directions, thus forming a lattice-work, which furnishes support for every shoot to mount up by means of its tendrils.

Celery is *blanched* by planting the young plants at the bottom of trenches, dug twelve or eighteen inches deep; in proportion as the celery grows, the earth which was taken out of the trenches is put back again with care, that it may not get into the heart of the plants. The stems growing thus underground, or kept from the light and air, remain white, or do not acquire the green hue of herbaceous parts of plants exposed to the light of the sun. In consequence of this mode of proceeding, when the celery has finished growing, and is ready for use, it will be found buried in the centre of elevated ridges, the intermediate furrows being caused by the removal of the earth to form these. The plants are dug out as wanted.

Sea Kale is blanched by remaining constantly covered during its growth by earthenware pots, made tall expressly for this purpose. The pots have a small cover which takes off to allow of the progress of the kale being examined.

and general figure, only it is made of iron and is curved round a little, instead of being a flat piece of tempered steel. It is used for taking up small plants with a ball of earth round their roots, and for resetting them by making a hole in the mould to receive that earth: by this mode the plant receives little or no check to its growth in consequence of this removal; for the roots remain untouched during the process. A small fork like a dung-fork is also used to take up plants with, or to stir the earth close to them, which it does without cutting or injuring the roots as a spade or hoe would do.

Plants that grow early in the spring, or which are prematurely brought forward by forcing on hot-beds, require to be sheltered on the approach of frost. A very slight covering is sufficient in many cases, straw-litter or fern-leaves even being enough to prevent the radiation of heat from the earth, and when, in addition to these, mats of bass are spread over them, the frost must be severe that can penetrate to the plants beneath.

Single plants are sheltered by covering them over with garden-pots, or with *hand-glasses*, small frames made of lead or iron, in which panes of glass are inserted, as the casements of cottages are glazed.

#### POTATOES.

THIS well-known and important vegetable holds an intermediate place between the grain-bearing plants, which supply us with flour for bread, and those of which the leaves, roots, &c., are consumed as food. The potato contains a large proportion of starch. This vegetable principle abounds most in seeds; and of all seeds, the *Cerealia* contain the most.

The potato thrives best in a light, dry, loamy soil, and does not require much manure of any kind. This plant is never raised from seed for a crop, but small pieces of the *tubers*, or potatoes, are cut out, each having a bud, or eye, in it. These pieces are called *sets*, and are planted in rows in March or April. The potato requires a considerable quantity of tillage during its growth, the crop must be kept perfectly free from weeds by frequent hoeings, and the weak stem must be supported by having the earth drawn up about it when the plants are young. The crop is gathered in October or November, when the stalks begin to decay; the plants are dug up, and the tubers taken off from the roots. If stored in a cool, dry place, the potato will keep till near Midsummer of the following year, though in Spring the tubers will begin to put forth roots, especially if any damp gets to them. Should this vegetation proceed too far, the root is unfit for food, in consequence of the chemical changes brought about by the vegetable vitality.

The potato belongs to a family of plants, almost every one of which is, in a greater or less degree, poisonous. The noxious principles generally abound in the fruit or leaves, while the roots, and the subterranean stems, such as the potato, are commonly innocent, if not wholesome, when boiled; but so formidable are the deleterious properties of the order, that even in the case of the valuable vegetable now under our consideration, the water in which it has been cooked is, in a certain degree, poisonous.

Starch in considerable quantities is obtained from potatoes, by crushing them, and well washing the pulp repeatedly, in cold water, till all the starch is extracted; the water then must be evaporated, or decanted off, and the starch will be left nearly pure.

#### THE PRINCIPAL GARDEN VEGETABLES WHICH SERVE FOR FOOD

The great variety of vegetable productions which serve as

food to man, speaking especially of those which he cultivates, may be classed under a few great divisions, conformably both to their botanical characters, and to the part of the plant which is consumed. Though there is no part of a plant, which, in different species, is not eaten, yet, as forming a considerable portion of his diet, it will be found that it is either the root, the stem, the leaves, or the fruit, that man makes use of, while the bark, the seed, the flower, the bud, &c., of other species, are commonly used only as condiments, or sauces.

Next to the *Cerealia*, the seeds of that order of plants, called from their fruit, *Leguminous*, contain the greatest proportion of farina. The pea and the bean are the principal genera of the order employed as food by man in Europe.

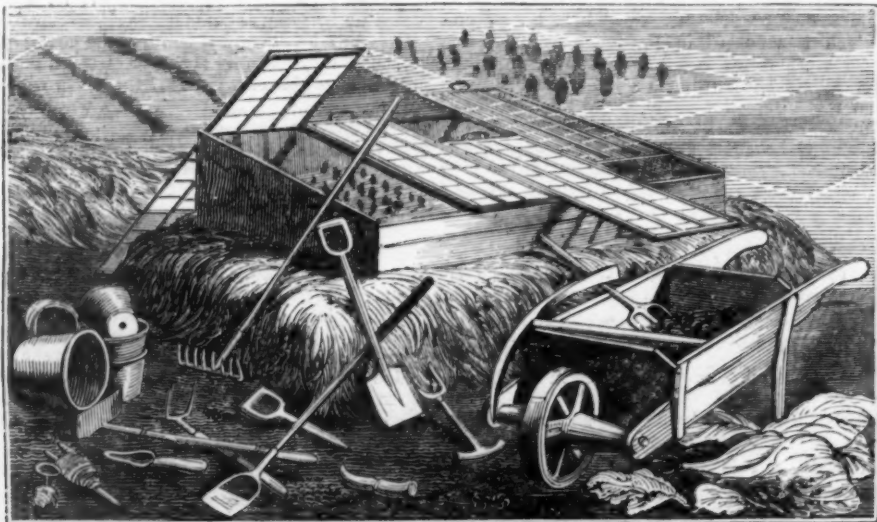
The **PEA** is a climbing annual plant with a white flower; the seed, in its green, or unripe, state, constitutes a favourite dish, but for this purpose it is cultivated as a garden vegetable, while agriculture can alone furnish the ripe seed in sufficient quantities to supply the demand for dry peas, in the Navy, in Hospitals, &c. The pea requires a warm soil, the crop is gathered when the pod is quite ripe and dry, the seed is threshed out, the stalks and leaves, or the *haulm*, is sometimes given to cattle as fodder.

The seed of the pea tribe divides into two more readily than most seeds containing two *cotyledons*, or seed leaves. *Split-peas* are produced by grinding the seed lightly between mill-stones, or plates of iron, in mills constructed for the purpose; this operation frees the germ of the seed from the skin or coats, and also separates the former into the two portions, each of which consists of an undeveloped cotyledon.

The **BEAN**. This name is given to different species of plants, though all belonging to the *Leguminous* order: the *broad bean*, of which the unripe seed alone is eaten as a vegetable, is a species of the genus *Vicia*, or Vetch; an annual, growing to the height of from two to three feet, which, unlike the other species, is not a climbing plant. The delightful fragrance of its black and white flowers is familiar to every one; but the principal use of this bean when ripe, is as fodder for horses, cattle, hogs, and poultry. The *French* or *Haricot bean* is a dwarf species, and the *Scarlet-runner*, in Britain one of the most universally cultivated of all garden vegetables, is another species of the same genus *Phaseolus*; the whole pod or fruit of these plants is eaten before it is ripe. Both are of the easiest culture, but they must not be sown till all danger of frost is over. There are numerous varieties, and some of these are cultivated for food in nearly every country of the world where gardening is practised.

The **TARR** and the **LENTIL** are species of the genus *Ervum*, and are used as food in some continental countries, but in England they are only cultivated for fodder.

The *Leguminous* order contain but few positively unwholesome or poisonous genera; among these the *Lathyrus*, *Laburnum*, and *Orobus*, are best known for their beautiful or fragrant flowers, which are such universal favourites.



MELON FRAME, AND GARDENING TOOLS.